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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,902	12/24/2003	Ki-Jac Park	1793.1099	9195

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WASHINGTON, DC 20005

EXAMINER
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HALEY, JOSEPH R

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/743,902

Applicant(s)

PARK ET AL.

Examiner

Joseph Haley

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The Korean Office Action of 12/19/04 has been considered but was lined through so as to not be printed on the front of the patent.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 12 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (US 6410904) in view of the applicant's admitted prior art.

In regard to claim 1, Ito et al. teaches a drive chip integrated laser diode module comprising: a laser diode module main body to generate and emit laser light (fig. 3); a plurality of first leads protruding outwardly from the laser diode module main body to receive electric power (elements 68a-d); a drive chip (element 5); a plurality of coupling holes in the drive chip in which each of the first leads is inserted (fig. 4, see where elements 68a-c pass through drive chip 5), respectively; a plurality of inner connectors in the drive chip, electrically connected to each of the first leads (see column 8 lines 25-29), respectively; a plurality of second leads protruding outwardly from the drive chip; a main board (element 3); and a through hole in the main board through which the laser diode module main body passes (32); wherein the drive chip and the main board are integrally formed with respect to the laser diode module main body (fig. 4)

but does not teach a plurality of lands provided on the main board, electrically connected to the second leads.

The applicant's admitted prior art teaches a plurality of lands provided on the main board, electrically connected to the second leads (fig. 1 element 14).

The two are analogous art because they both deal with the same field of invention of housings for laser diodes.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the drive chip apparatus of Ito et al. with the leads and lands of the prior art. The rationale is as follows: At the time of invention it would have been obvious to provide the drive chip apparatus of Ito et al. with the leads and lands of the prior art because it would make the drive chip more easily removable.

In regard to claim 2, Ito et al. and the applicant's admitted prior art teach all of the elements of claim 2 (see claim 1 rejection above) except a bobbin connected to the base through a suspension, and movably installed in a track direction and a focus direction of the optical recording medium above the base; an objective lens mounted on the bobbin to focus light emitted from the laser diode module on the optical recording medium; a magnetic actuating unit provided across the base and the bobbin to actuate the objective lens in the track direction and the focus direction of the optical recording medium; and a photodetector provided on the base to detect an information signal and an error signal by receiving light reflected by the optical recording medium.

The examiner takes official notice that these elements are common in optical disc systems and would have been obvious to use. The rationale is as follows: At the time

of invention it would have been obvious to provide the apparatus of Ito et al. and the prior art with a moveable bobbin, objective lens and photodetector because these elements are old and well known and have been proven effective many times.

In regard to claim 3, Ito et al. teaches wherein the drive chip integrated laser diode module is installed on the base by coupling the main board and the installation portion using a screw, and heat generated from the laser diode module main body is dissipated through the screw and the base (see fig. 4 elements 35 and 36 see also column 8 lines 37-41. Since the claimed structure is the same as Ito et al. the screw inherently will dissipate heat).

In regard to claim 4, Ito et al. teaches wherein the laser diode module main body is installed in the installation hole so as to contact an inner wall of the installation hole provided in the base, and heat generated from the laser diode module main body is dissipated through the base (see element 6).

In regard to claim 5, see claim 1 rejection above.

In regard to claim 6, Ito et al. teaches wherein the laser diode module main body comprises: a laser diode inside the laser diode module main body; and a plurality of laser diode leads protruding outwardly to apply electric power to the laser diode (fig. 3).

In regard to claim 12, the applicant's admitted prior art teaches wherein the drive chip further comprises a plurality of drive chip leads protruding outwardly (fig. 1 element 14).

In regard to claim 14, the Ito et al. teaches a through hole in the main body through which the laser diode module main body passes (32).

In regard to claim 15, wherein the main board is directly coupled to a surface of the drive chip so that the structure is made compact (see fig. 4 elements 35 and 36 see also column 8 lines 37-41).

In regard to claims 16 and 17, see claim 1 rejection above.

In regard to claim 18, see claim 3 rejection above.

In regard to claim 19, see claim 4 rejection above.

In regard to claim 20, see claim 1 rejection above.

In regard to claim 21, see claim 4 rejection above.

Claims 7-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. and the applicant's admitted prior art further considered with Chun et al. (US 6525405).

In regard to claim 7, Ito et al. and the applicant's admitted prior art teach all the elements of claim 7 except wherein the drive chip is packaged with a mold resin in a state in which a semiconductor device is mounted on a lead frame.

Chun et al. teaches wherein the drive chip is packaged with a mold resin in a state in which a semiconductor device is mounted on a lead frame (fig. 1.1 see also column 4 lines 41-47).

The three are analogous art because they all deal with the same field of invention of semiconductor devices.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the drive chip apparatus of Ito et al. with the leads and lands of the prior art and the molded chip of Chun et al. The rationale is as follows: At the time of

invention it would have been obvious to provide the drive chip apparatus of Ito et al. with the leads and lands of the prior art and the molded chip of Chun et al. because using the molding method of Chun et al. makes mass production easier.

In regard to claim 8, Ito et al. teaches a plurality of coupling holes formed in the drive chip, wherein the plurality of laser diode leads are respectively inserted into the coupling holes (see fig. 6 elements 68 a-c).

In regard to claim 9, Ito et al. teaches a plurality of inner connectors formed in each of the coupling holes, respectively, wherein each of the laser diode leads are respectively electrically connected (column 8 lines 25-29).

In regard to claim 10, Ito et al. teaches wherein the inner connectors are provided without protruding outwardly from the coupling holes (see fig. 4 elements 68a-c. The connectors do not protrude from the housing).

In regard to claim 11, Ito et al. teaches wherein the inner connectors have a predetermined shape in which end portions of the laser diode leads are inserted (see fig. 4 elements 68a-c).

In regard to claim 13, the applicant's admitted prior art teaches a plurality of lands provided on the main board, wherein the drive chip leads are electrically connected to the lands (paragraph 9 lines 6).

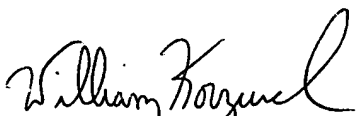
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Haley whose telephone number is 571-272-0574. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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